

WHAT IS CLAIMED IS:

1. An apparatus for repairing a collapsed space within vertebral bodies,
which comprises:

5 an introducer including an elongate member having proximal and distal
ends and defining a longitudinal bore, the elongate member having a threaded portion
adjacent the distal end and being configured for insertion into vertebral bodies to
facilitate mounting of the elongate member to the vertebral bodies; and
a catheter at least partially positionable within the longitudinal bore of
10 the elongate member of the introducer, the catheter including a catheter body member
having proximal and distal ends, an inflation lumen extending along at least a portion
of the catheter body and an expandable membrane adjacent the distal end of the
catheter body member in fluid communication with the inflation lumen, the expandable
membrane extendible beyond the distal end of the introducer and positionable within
15 the vertebral bodies and being expandable in response to inflation fluids conveyed by
the inflation lumen to exert a force on the vertebral bodies to achieve a desired spacing
therewithin.

2. The apparatus according to claim 1, wherein the catheter further
includes a treating agent delivery lumen extending along at least a portion of the
catheter body and in fluid communication with an interior of the vertebral bodies.

WO 99/02214

PCT/US98/14146

3. The apparatus according to claim 2, further comprising an injection device coupled to at least one of the inflation lumen and treating agent delivery lumen for providing the inflation fluids to the expandable membrane and to the treating agent delivery lumen for providing bone growth inducing materials within the interior of the vertebral bodies.

4. The apparatus according to claim 1, wherein the introducer further includes a projection along an external length thereof, the projection facilitating the rotation of the threaded portion into the vertebral bodies.

5. The apparatus according to claim 1, wherein the threaded portion of the elongate member further includes a collar, the collar having an elastic seal adapted to form a seal along an external portion of the vertebral bodies.

6. The apparatus according to claim 3, wherein the injection device is a syringe.

7. The apparatus according to claim 1, wherein the expandable membrane is releasably attached to the catheter body member.

8. The apparatus according to claim 7, further including an uncoupling sleeve mounted about the elongate member of the introducer, the uncoupling sleeve movable to separate the expandable membrane from the catheter body member.

5 9. The apparatus according to claim 1, further including a source of inflation fluid in communication with the inflation lumen to expand the expandable membrane, the source of inflation fluid including an injected bone growth inducing material.

10 10. A method for reforming a collapsed vertebra, comprising the steps of:
mounting an introducer to vertebral body portions to access a collapsed area therewithin, the introducer defining a longitudinal bore;
inserting a catheter within the longitudinal bore of the introducer, the catheter including a catheter body having an expandable membrane mounted adjacent a distal end thereof;
positioning the expandable membrane within the collapsed area of the
15 vertebral body portions; and
expanding the expandable membrane whereby the expandable membrane exerts a force on the vertebral body portions to increase a dimension of the collapsed area to achieve a desired spacing therewithin.

11. The method according to claim 10, further including the step of injecting a treating agent into the collapsed area of the vertebral body portions to facilitate bone growth within the collapsed area of the vertebral bodies.

12. The method according to claim 11 wherein the catheter body includes a
5 delivery lumen terminating in an opening in the catheter body member and wherein the step of injecting includes introducing the treating agent into the delivery lumen to be conveyed thereby and dispensed through the opening.

13. The method according to claim 10, wherein the step of expanding includes inflating the expandable member with inflation fluids.